



## Record of Modification

Phase 1 Site Characterization Sampling and Analysis Plan Field Activities  
Columbia Fall Aluminum Company RI/FS  
Phase 1 SAP MOD #11

**Instructions to Requester:** Submit to Roux RI Manager or Roux RI/FS Project Manager  
Roux RI Manager will maintain legible copies in a binder that can be accessed by personnel.

### Project Work Plan/QAPP (check one):

- ☒ 2015 Phase 1 SAP
- ☐ SOP (Title, # and approval date): \_\_\_\_\_

Requester: Michael Ritorto, RI Manager

Date: May 19, 2017

### Applicable section of SAP/SOP:

There is not an applicable section of the SAP/SOP because Pneumatic Slug Testing was not discussed in the Phase I SAP.

### Description of Modification:

Roux Associates will complete a pneumatic slug test at existing monitoring wells distributed across the Site. The tests will be conducted on the new 2-inch diameter wells installed as part of the Phase I Site Characterization. For a pneumatic test to be conducted, the entire length of screen of the monitoring well must be submerged beneath the level of standing water in well. Based upon water levels measured in July and August 2016, it is anticipated that approximately 38 of the 44 newly installed wells will be tested; however, the final determination of wells to be tested will be made based upon water levels at the time the testing is to be performed.

Pneumatic slug tests will be conducted within the casing of each well using compressed air as the displacing (slug) volume. The water column within the well casing will be depressed by increasing the air pressure in the casing above the water column. When the water level is depressed to a predetermined level and the air pressure stabilized within the test interval, the air pressure within the well casing will be rapidly released. The instantaneous release of air pressure from the well casing will initiate a pneumatic slug withdrawal test, which will be recorded using a pressure transducer and a data logger. All tests will be conducted in accordance with the procedures outlined in the SOP titled "Standard Operating Procedure 4.8 for Conducting a Pneumatic Slug Test". Data analysis to determine hydraulic conductivity values for each test will be performed using a combination of Excel, Aqtesolv and Win-Situ software. Following completion of testing and analysis, a report will be prepared to describe the tests and the data evaluation methods, and to summarize the test results.

**Rationale for Modifications / Potential Implications of Modifications:**

The pneumatic slug testing program will be performed to evaluate the *in situ* permeability contrast between various hydrogeologic units beneath the site. The pneumatic slug tests will generate data that will be used to determine the hydraulic conductivity at each well as part of the ongoing Phase I Site Characterization program. The hydraulic conductivity data from each newly installed well will be added to the overall Phase I Site Characterization dataset and used for evaluation of groundwater flow beneath the Site.

**Duration of Modification (Check one):**

☐

Temporary

Date(s) \_\_\_\_\_

Sample Numbers \_\_\_\_\_

☒

Permanent (Proposed Text Modification Section)

May 10, 2017

Effective Date: \_\_\_\_\_

**Proposed Text Modifications in Associated Document:**

This form serves to document the change as described above, no document revisions are proposed.

Data Quality Indicator (check one) – Please reference definitions on next page for direction on selecting data quality indicators:

☐

Not Applicable

☐

Reject

☐

Low Bias

☐

Estimate

☐

High Bias

☒

No Bias

Roux Project Manager Approval: Michael Ritorto Date: 5/10/2017  
(Roux RI/FS Project Manager or designate)

EPA Review and Approval: Mike Cirian Date: \_\_\_\_\_  
(USEPA RPM or designate)

## DATA QUALITY INDICATOR DEFINITIONS

***Reject*** – Samples associated with this modification form are not useable. The conditions outlined in the modification form adversely affect the associated sample to such a degree that the data are not reliable.

***Low Bias*** – Samples associated with this modification form are useable, but results are likely to be biased low. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated low.

***Estimate*** – Samples associated with this modification form are useable, but results should be considered approximations. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimates.

***High Bias*** – Samples associated with this modification form are useable, but results are likely to be biased high. The conditions outlined in the modification form suggest that associated sample data are reliable, but estimated high.

***No Bias*** – Samples associated with this modification form are useable as reported. The conditions outlined in the modification form suggest that associated sample data are reliable as reported.